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ABSTRACT

This study sought to develop an instrument capable of assessing the effect of the classroom teacher's model of teaching upon the model acquired by the student. An instrument was designed which contained statements grouped into one of three categories depending upon the particular skill in question. These skills were instructional, interpersonal, and managerial in nature. A Likert-type scale was used to indicate the extent to which an individual's model was teacher-, class-, or student-centered. Data were gathered from Level I interns, student teachers, and cooperating teachers in the competency based teacher education program at the University of Georgia. Pre- and post-data were obtained from Level I interns; a single sampling of responses was collected from student teachers and cooperating teachers. A correlational analysis was conducted which examined intra- and inter-group agreements. Numerous findings were made that indicate that the instrument was sensitive enough to measure changes. Among these results was that student teachers view the relationship between instructional and interpersonal models of teaching as similar whereas Level I interns see them as unrelated and cooperating teachers were uncertain as to the relationship between the two teaching models. (Authors/MLH)

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Assessment of the Effects of the Competency Based Teacher Education Experience on the Acquisition of a Teaching Model

A Paper Presented at the Forty-Ninth Annual Meeting
of the National Association for Research
in Science Teaching

San Francisco, California

by

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OBJECTIVES AND RATIONALE

This study was designed to accomplish two purposes. First, the investigators wished to develop and test an instrument to assess the model of teaching/instruction which a teacher preferred. The instrument, a copy of which is contained in Appendix A, measured teacher preference in the classroom on three dimensions: classroom management; instruction; and interpersonal dimensions. Each of these dimensions was measured using a scale which provided for teacher-centered, class-centered, and child-centered responses.

Secondly, the study sought to gain information on the development of a teaching/instructional model by pre-service teachers enrolled in a Competency Based Teacher Education (CBTE) program at the University of Georgia. Specifically, the study sought information in the following areas:

1. Would a significant change occur in the preferred model of instruction expressed by Level I interns as measured before and after their field experience?

2. If the before/after change did occur for these interns, would such a change move in the direction of the preferred model of instruction expressed by the classroom teacher?

3. Does a significant difference exist in the preferred model of instruction expressed by Level I interns, Level IV interns in their student teaching experience, and cooperating teachers?

In part, because of the advent of field based and competency based teacher education programs, the pre-service professional education of teachers is changing. As more institutions form some type of cooperative program with local schools, teacher interns are spending more of their time in actual classrooms. This reality training is intended to accomplish a variety of goals. Clegg and Ochoa (1970) outline two of these goals, direct practice with children and observation of the teacher at work.

As more hours are spent in the classroom and less on the university campus, a major influence is exerted by the cooperating teacher upon the student teacher's development (Berger and Goldberg, 1974). Clegg and Ochoa (1970) have warned that the cooperating teacher's model may not be a suitable one.

Concern over the model of teaching displayed in the classroom is of particular importance in elementary school science. As Rowe (1974) has noted, student teachers rarely observe science being taught in elementary classrooms. That which is observed may not be in agreement with current views of science education (Butzow and Ryan, 1975).

Given that classroom teaching is the primary model with interns emulate, and given a variety of field experiences during the junior and senior years, the question of when a teaching model begins to assume a measureable form becomes of great importance. If interns form opinions and beliefs about teaching very early in their professional training, and are strongly influenced by the first teacher with whom they work, care must be taken to ensure that beginning interns are placed with suitable teaching models. Bridgman (1974) stated the problem quite succinctly:

> While undergraduate programs have the apparent advantage of scheduling teaching experiences over two or three years, the advantage may be an illusion if the internship is crucial for refining perceptions of teaching as I believe it is.

METHODOLOGY AND DESIGN

Subjects of this study were 26 pre-service elementary education majors enrolled in a CBTE program at the University of Georgia, and all classroom teachers in two elementary schools of the Clarke County Public School System, Athens, Georgia.

The intern subjects were: (1) eleven beginning interns, all juniors, who were in the first quarter of their progressional education sequence and who had had no prior field experiences, and (2) fifteen Level IV (Student Teachers) interns, all of whom had participated in three previous field experiences.

Teacher subjects of the study were all regular classroom teachers. To avoid as much bias as possible, all teachers in the two field experience schcols were asked to complete the instrument. The only data used in the study were those from the teachers who served as cooperating teachers for the Level I and IV interns of the study.

Study data were gathered from interns before and after their field experience. Level I interns were in-school for three weeks during the quarter and Level IV interns were in-school for the total ten weeks of the quarter. Level I interns completed the preferred model of teaching instrument prior to commencing the field experience and upon its completion. Teachers completed the preferred model of teaching instrument prior to the interns entering the in-school phase of the quarter.

DATA ANALYSIS

Teacher-centered (TC), class-centered (CC), and student-centered (SC) mean response scores and standard deviations were computed for Level I interns (pre), Level I interns (post), and cooperating teachers on each of the dimensions: instruction, interpersonal skills, and management. No attempt was made to label a respondent as being teacher-centered, class-centered, or student-centered on the dimensions. Tests of significance of the differences in responses were conducted between the groups Level I interns (pre) and Level I interns (post); Level I interns (pre) and cooperating teachers; and Level I interns (post) and cooperating teachers. Descriptive data and results of significance tests are presented in Tables I(a) and I(b) respectively for 11 Level I interns and 22 cooperating teachers.

Table I(a)
Descriptive Data for Preferred
Instructional Model of Cooperating Teachers and
Level I Interns Prior to and After Classroom Experience

		Pre-experience Mean (N=11)	SD	Post-experience Mean (N=11)	SD	Cooperating Teachers Mean (N=22)	SD
Instructional	TC	3.75	0.354	3.43	0.462	3.114	0.522
	CC	3.95	0.678	4.20	0.510	3.421	0.439
	SC	3.48	0.530	3.25	0.559	2.989	0.419
Interpersonal	TC	3.50	0.447	4.00	0.742	3.477	0.567
	CC	3.41	0.437	3.77	0.647	3.636	0.468
	SC	4.00	0.592	3.91	0.625	3.614	0.486
Management	TC	4.41	0.491	4.09	0.539	3.477	0.449
	CC	3.14	0.710	3.50	0.922	3.159	0.447
	SC	2.95	0.688	2.82	0.681	2.614	0.533

Table I(b)
Results of Significance Tests for Preferred
Instructional Model of Cooperating Teachers (T) and
Level I Interns Prior to (P) and After (P') Classroom Experience

		Significance Test (P'/P)	p	Significance Test (T/P)	p	Significance Test (T/P')	p
Instructional	TC	$t = -2.84$	$<.05$	$t = -3.64$	$<.01$	$t = -1.71$	$<.10$
	CC	$t = +1.42$	ns	$t = -2.74$	$<.05$	$t = -4.58$	$<.01$
	SC	$t = -1.44$	ns	$t = -2.89$	$<.01$	$t = -1.51$	ns
Interpersonal	TC	$t = +2.15$	$<.10$	$t = -0.12$	ns	$t = -2.25$	$<.05$
	CC	$t = +2.17$	$<.10$	$t = +1.34$	ns	$t = -0.69$	ns
	SC	$t = -0.79$	ns	$t = -2.00$	$<.10$	$t = -1.50$	ns
Management	TC	$t = -2.07$	$<.10$	$t = -5.45$	$<.01$	$t = -3.46$	$<.01$
	CC	$t = +1.53$	ns	$t = +0.11$	ns	$t = -1.44$	ns
	SC	$t = -0.72$	ns	$t = -1.57$	ns	$t = -0.95$	ns

Data were gathered from 15 student teachers as to their preferred teaching model. Teacher-centered (TC), class-centered (CC), and student-centered (SC) mean response scores and standard deviations were computed for this group. Results of these computations are presented in Table II.

Table II
Descriptive Data for Preferred
Instructional Model of Student Teachers

	Instructional			Interpersonal			Management		
	TC	CC	SC	TC	CC	SC	TC	CC	SC
Mean	3.25	4.22	3.35	3.30	4.00	3.97	3.57	3.50	3.13
SD	0.57	0.54	0.31	0.75	0.67	0.58	0.65	0.87	0.67

For each of the dimensions Instruction (Inst.), Interpersonal Relations (Inter.), and Management (Man.) inter-dimensional correlations were computed for each of the groups: Level I interns (post experience), student teachers, and cooperating teachers. Results of these computations are presented in Table III.

Table III
Inter-Dimensional Correlations of Preferred Instructional Model for Three Groups: Level I Interns (Post), Student Teachers and Cooperating Teachers

		Model Dimension		
		Instruction	Interpersonal	Management
Level I Interns (Post)	Inst.	+1.00	-0.83***	+0.22
	Inter.		+1.00	+0.35
	Man.			+1.00
Student Teachers	Inst.	+1.00	+0.61**	+0.28
	Inter.		+1.00	+0.59**
	Man.			+1.00
Cooperating Teachers	Inst.	+1.00	+0.36	+0.42*
	Inter.		+1.00	-0.69***
	Man.			+1.00

* $p < .05$
** $p < .02$
*** $p < .01$

The interrelationships among the three dimensions formed what was assumed to be an instructional model. Noting differences between pairs of intercorrelations among the three groups constituted what was identified as differences in instructional models. Such inter-group comparisons were made among the groups: Level I interns (G_1), student teachers (G_2), and cooperating teachers (G_3). Results of inter-group comparisons are found in Table IV.

Table IV
Significance Tests for Differences in Inter-Dimensional Correlations Among Level I Interns (G_1), Student Teachers (G_2), and Cooperating Teachers (G_3)

	Instructional (Inst.)	Interpersonal (Inter.)	Management (Man.)
Inst.	----	G_1 vs. G_2:Z = -4.16**	G_1 vs. G_2:Z = -0.14
		G_1 vs. G_3:Z = -3.71**	G_1 vs. G_3:Z = -0.53
		G_2 vs. G_3:Z = +0.90	G_2 vs. G_3:Z = -0.43
Inter.		----	G_1 vs. G_2:Z = -0.66
			G_1 vs. G_3:Z = +2.91*
			G_2 vs. G_3:Z = +4.14**
Man.			----

* $p < .01$
** $p < .001$

RESULTS

Level I interns indicated a significantly ($p < .05$) lower frequency of teacher-centered or authoritarian responses regarding instructional decisions after classroom experiences than prior to those experiences. This change was made in the direction of agreement with that response frequency indicated by cooperating teachers. For no other scales or dimensions can such statements be made since results of significance tests between Level I interns and cooperating teachers most likely occurred as a result of chance.

Certain conclusions can be reached with some degree of certainty as a result of intra-group correlational analyses among model dimensions. Among these are:

A. Level I Interns:

1. viewed instructional tasks to be negatively correlated with interpersonal tasks,

2. viewed instructional tasks as unrelated to tasks in classroom management, and

3. viewed interpersonal tasks as unrelated to tasks in classroom management.

B. Student Teachers:

1. viewed instructional and interpersonal tasks to be significantly correlated with one another,

2. viewed instruction unrelated to management tasks, and

3. viewed interpersonal tasks as positively correlated with tasks in management.

C. Supervising Teachers:

1. viewed instructional tasks as positively correlated with management tasks,

2. viewed instructional tasks as unrelated to interpersonal tasks, and

3. viewed interpersonal tasks as negatively correlated with tasks of classroom management.

In addition, conclusions can be drawn with some degree of certainty as a result of inter-group significance tests of differences in interrelationships of model dimensions. Among these are:

A. G_1 vs. G_2

NOTE * 1. Student teachers viewed the relationship between instructional and interpersonal tasks as one in the same whereas Level I interns saw them as inconsistent with one another;

2. The two groups viewed similarly the relationship between tasks in Instruction and Management.
Neither group felt the two to be related; and,

3. The two groups viewed the relationship between tasks in Management and Interpersonal relations in the same manner. Student teachers viewed interpersonal tasks and management tasks as one in the same whereas this conclusion is less certain with Level I interns.

B. G_1 vs. G_3

1. The two groups differed significantly in their views of the relationship between Instructional and Interpersonal tasks. Whereas Level I interns viewed instructional tasks as inconsistent with tasks in interpersonal relations, cooperating teachers saw no relationship between the two;

2. The two groups had similar views regarding the relation of instructional to management tasks. Cooperating teachers viewed the two dimensions as being more similar, however, than did Level I interns, and

3. The two groups differed as to the relationship between interpersonal and management tasks. Whereas Level I interns saw no relationship between the two tasks, cooperating teachers viewed the two as inversely related to one another.

C. G_2 vs. G_3

1. The groups viewed similarly the relationship between instructional and interpersonal tasks. Student teachers viewed the two tasks as positively related. Cooperating teachers were less certain as to the relationship between the two;

2. The groups did not differ significantly in their views regarding the relationship between instructional and management tasks. Whereas cooperating teachers viewed the two as significantly related, student teachers saw no relationship between the two; and

NOTE * 3. The two groups differed significantly in the views concerning the relationship between tasks in management and interpersonal relations. Student teachers viewed tasks in interpersonal relations to be consistent with tasks in classroom management. The opposite conclusion was indicated by cooperating teachers; namely, interpersonal skills are inconsistent with skills in classroom management.

SIGNIFICANCE OF FINDINGS

From an examination of Level I interns as a result of acquiring classroom experience, little can be said regarding instructional model changes. When dimensions are viewed in isolation of one another, only drastic changes are identified as significant. On the other hand, when inter-dimensional correlations are noted, changes of a more subtle nature are detected.

If the groups Level I interns, student teachers, and cooperating teachers can be viewed as differing only in length of classroom experience, the effects of experience are pronounced. The relationships among dimensional components of a person's teaching model are altered with this experience. In some instances shifts were detected toward alignment with relationships expressed by more experienced cooperating teachers. In other cases shifts were directed toward misalignment with relationships expressed by cooperating teachers.

Perhaps this study has demonstrated a need for conducting studies of a longitudinal nature. Using different groups at differing stages of exposure to classroom teaching and teachers will yield dramatic results attributable to differences among groups. The effects of exposure to teaching and teachers on the acquisition of a teaching model must be assessed with repeated observations of the same group of student teachers as experience is gained.

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INTERN PREFERRED MODEL OF INSTRUCTION

Listed below are a series of statements relating to different phases of an instructional model. Express the extent to which each of the statements agrees with your preferred model of instruction using the following scale.

5 - at all times
4 - most of the time
3 - some of the time
2 - little of the time
1 - never

In my classroom I should
- tell students what to do ..... ____
- consult and advise students ..... ____
- allow students to do their own thing ..... ____

Activities in my classroom should be
- highly structured ..... ____
- prearranged and flexible ..... ____
- sponteneous ..... ____

As a classroom teacher I should encourage students to
- develop personal relationships with me ..... ____
- develop personal relationships with other children ..... ____
- get to know themselves ..... ____

Decisions in the classroom should be made by
- the teacher ..... ____
- teacher and children together ..... ____
- the children ..... ____

Decisions in the classroom should be enforced by
- the teacher ..... ____
- group pressure ..... ____
- individual pressure and commitment ..... ____

The purpose of instruction in the classroom should be to
- accomplish the teacher's goals..... ____
- accomplish the group's goals ..... ____
- accomplish each child's goals ..... ____

In the classroom knowledge should be provided by
- the teacher ..... ____
- the group ..... ____
- individual children ..... ____

When opinions in the classroom are in conflict, children should be expected to
- conform to the teacher's opinion ..... ____
- accept the group's opinion ..... ____
- act on their own opinions ..... ____